

**REMARKS**

**35 USC 102:**

1. Claims 1-5 and 7 are rejected under 35 USC 102(e) as being anticipated by Needham et al. (USPN 6,270,895). Applicants disagree. Claim 1 has been amended. Claim 5 has been canceled making the objections to this claim moot.

Applicants contend that the present invention is not anticipated by Needham. Needham discloses the use of glitter particles or film particles (col. 1 lines 45-50) or abrasive particles (col. 3 lines 54-64) in its filaments for the purpose of enhancing the filament appearance. Needham does not disclose the listed slip agents of amended claim 1 as a method of cleaning teeth as in the present invention. The Examiner indicates that Needham discloses the use of boron nitride as in Applicants' invention. The boron nitride in claim 1 of Applicants' invention list is different from the cubic boron nitride listed as an abrasive particle in Needham. Boron nitride is available in three common crystal forms: hexagonal (graphitic), cubic (diamond structure) and wurtzite (closed packed hexagonal). The hexagonal form referred to as **boron nitride**, is a soft white powder that imparts lubricity, while the **cubic boron nitride** (CBN) is a hard abrasive crystal. Thus, CBN is an abrasive additive that does not act as the slip agent of the boron nitride in the present invention. Thus, Applicant contends that CBN and boron nitride are not the same additive. Applicants' invention does not meet the prima facie case of anticipation under Needham because Applicants' invention claims slip agents of "fluorinated olefin polymer, boron nitride, molybdenum disulfide and fullerene" which are not disclosed by Needham.

For the above reasons, amended claim 1 is believed not anticipated by Needham and thus, in allowable condition. Claims 2- 4 and 7 are dependent from amended claim 1 and thus, believed allowable for the above stated reasons. Reconsideration and allowance of claims 1-4 and 7 is respectfully requested.

2. Claims 1-5 and 7 have been rejected under 35 USC 102(e) as being anticipated by Antonio (USPN 6,482,511). Applicants disagree. Claim 1 has been amended. Claim 5 has been canceled making the objections to this claim moot.

Applicants contend that Antonio does not anticipate amended claim 1 of the present invention. Antonio discloses a laser markable monofilament. Antonio does not disclose any of the agents disclosed in amended claim 1 of the present invention. The Examiner states that Antonio discloses graphite and talc as slip agents. Applicants' invention does not meet the prima facie case of anticipation under Antonio because Applicants' invention claims slip agents of "fluorinated olefin polymer, boron nitride, molybdenum disulfide and fullerene" which are not disclosed by Antonio. Thus, Antonio does not anticipate amended claim 1 and amended claim 1 is believed to be in allowable condition.

Claims 2- 4 and 7 are dependent from amended claim 1 and thus, believed allowable for the above stated reasons. Reconsideration and allowance of claims 1-4 and 7 is respectfully requested.

**35 USC§ 103:**

3. Claims 1-7 have been rejected under 35 USC 103 (a) as being unpatentable over Cross, (USPN 2,670,489) in view of Gueret (USPN 5,462,798). Applicants disagree. Claim 1 has been amended. Claim 5 has been canceled making the objections to this claim moot.

Cross ('489) discloses filaments with abrasive or medicinal additive agents for the purpose of imparting the affect of the medicinal effect. Cross does not contain a slip agent as admitted by the Examiner and as disclosed in amended claim 1 of the present invention. The slip agent of the present invention is not to impart a medicinal or effect from the additive but rather to reduce the coefficient of friction experienced by the filament in contact with a tooth to improve the cleaning efficacy of the toothbrush bristle (see page 1, lines 19-22 and page 2, lines 9-14). It is well known that the use of an abrasive additive agent, as disclosed in Cross, provides a scrubbing action to clean a tooth surface. Using a slip agent that slides across the tooth surface rather than scrubs (i.e. abrade) the tooth surface is not an obvious method for improving the cleaning efficacy of the brush bristles. It was unexpected that the slip agent improved cleaning efficacy of the brush bristles.

Gueret ('789) discloses the use of a slip agent "to reduce the wettability of the hairs of the applicator by the product to be distributed and, on the fiber of which the hairs consist so as to limit the attachment of the said product as much as possible." (col. 1, lines 20-24). Furthermore, Gueret discloses the use of the slip agent in a brush for applying cosmetic products such as nail polish and mascara (col. 1, lines 11-26). In claim 1 of Gueret, the addition of the slip agent into the fiber results in "improving the slip characteristics of the fiber and reducing it's wettability, thereby to reduce the quantity of said thick liquid cosmetic product that is retained on the brush..." These properties disclosed in Gueret are desirable when working with a mascara or cosmetic brush for a good transfer of the product (i.e. mascara or nail polish) being applied from the brush to the eyelash or fingernail. However, Gueret does not disclose the use of a slip agent for the method of cleaning teeth with improved cleaning efficacy as in the present invention (claim 1 and page 1, lines 19-22) ). Furthermore, to those of skill in the art of filament or bristle design, one so skilled wants the filament to retain the toothpaste longer in the bristle to improve actual cleaning of the teeth. Therefore, the use of a slip agent in a bristle or filament for a use in the method of cleaning of teeth would not be an obvious use for a filament of Gueret that has reduced wettability and thus would not retain the toothpaste in a method of teeth cleaning application as long as in the present invention.

Applicants contend for the above reasons that the prior art of Cross and Gueret would not make the present invention obvious singly or in view of each other. Since Cross is directed to impregnation of the filament with an additive that can be used for medicinal agents, polishing, abrasive purposes... and Gueret is directed toward applying liquid product such as nail polish and mascara to a substrate there is no suggestion of combining these two prior art references. Additionally, the use of the slip agents of claim 1 provide a method to clean teeth that differs from the abrasive agent of Cross for scrubbing, which would not have been obvious as a method for improved cleaning teeth efficacy to one of skill in the art. In the present invention, the method of cleaning using a slip agent in the bristles improved cleaning even with a slip agent with what would be considered by one of skill in the art as undesirable characteristics of reduced wettability and improved slip. However, what Applicants discovered unexpectedly was that using these filaments with slip agents (see amended claim 1) is that even though the improved slip and reduced wettability were not considered desirable, they did actually improve overall tooth cleaning because they allowed the filaments to slide in between teeth and gums with greater ease and also produced a larger cleaning area per stroke. This improved cleaning is shown in Table 5, page 16 and page 16 line 16 – page 27, line 10 of the present invention. Thus, for the above reasons, amended claim 1 is believed not obvious in light of Cross in view of Gueret. Hence, amended claim 1 is believed to be in allowable condition. Claims 2-4 and 6-7 are dependent from amended claim 1 and thus for the same reasons stated above are also believed to be non-obvious over Cross in view of Gueret and thus, in allowable condition. Reconsideration and allowance of claims 1-4 and 6-7 is respectfully requested.

4. Claim 8 has been rejected under 35 USC 103(a) as being unpatentable over Needham et al. (USPN 6,270,895) in view of Stewart (USPN 2,876,477).

Needham discloses the use of glitter to improve the appearance of the brush filaments and to be mildly abrasive. (col. 2, lines 4-8)

Stewart ('477) discloses using bristles with edges for scraping the tooth (see Figures 3-7) rather than the compositional make up of the bristle of the present invention for cleaning teeth.

Neither of these prior art references discloses the method of cleaning teeth using bristles prepared from a composition comprising a thermoplastic polymeric resin in admixture with a slip agent listed in amended claim 1. (See amended claim 1 from which claim 8 depends in the present invention.) Furthermore, Needham does not suggest nor lead one of ordinary skill in the art to combine its disclosures with that of Stewart to obtain the present invention. Needham discloses glitter for improved appearance while Stewart discloses edges for scraping the tooth. However, assuming *arguendo* that the two references are combined they would not yield or make obvious the present invention as neither discloses the use of a

slip agent of amended claim 1 for cleaning efficacy which lacks the abrasive nature of Needham and Stewart. For the above reasons, claim 8 dependent from amended claim 1, is believed to be non-obvious over the cited art and thus in allowable condition. Reconsideration and allowance of claim 8 is respectfully requested.

5. Claim 8 has been rejected under 35 USC 103(a) as being unpatentable over Antonio (USPN 6842,511) in view of Stewart (USPN 2,876,477).

Antonio discloses filaments that use a radiation sensitive, mark forming additive, not the slip agents of the present invention. The addition of the additive in Antonio is not for slip properties or wettability reduction but to make the polymer more receptive to laser light and allow it to be marked by a laser and not to improve the cleaning efficacy of teeth as in the present invention. As mentioned above Antonio does not disclose the slip agents of claim 1 of the present invention.

Stewart discloses using bristles with edges for scraping the tooth (see Figures 3-7) rather than the compositional make up of the bristle of the present invention for cleaning teeth. (i.e. the method of cleaning teeth with improved cleaning efficacy using bristles prepared from a composition comprising a thermoplastic polymeric resin in admixture with a list of slip agents.) (See amended claim 1 from which claim 8 depends in the present invention.)

Furthermore, Antonio does not suggest nor lead one of ordinary skill in the art to combine its disclosures with that of Stewart to obtain the present invention. Antonio discloses laser markable filaments with no reference to improved cleaning efficacy while Stewart discloses abrasive edges for scraping a tooth. However, assuming *arguendo* that the two references are combined they would not yield or make obvious the present invention as neither discloses the use of the slip agents of amended claim 1 for improved cleaning efficacy which lacks the abrasive nature of Stewart.

For the above reasons, claim 8 dependent from amended claim 1, is believed to be non-obvious over the cited art and thus in allowable condition. Reconsideration and allowance of claim 8 is respectfully requested.

6. Claim 8 is rejected under 35 USC 103(a) as being unpatentable over Cross (USPN 2,670,489) in view of Gueret (USPN 5,462,798) in view of Stewart, (USPN 2,876,477).

Applicants contend for the previously stated reasons in paragraph 3 above that the prior art of Cross and Gueret would not make the present invention obvious singly or in view of each other. Since Cross is directed to impregnation of the filament with an additive that can be used for medicinal agents, polishing, abrasive purposes... and Gueret is directed toward applying liquid product such as nail polish and mascara to a substrate there is no suggestion of combining these two prior art references. Additionally, the use of a slip agent to clean teeth rather than the abrasive agent of Cross for scrubbing, would not have been obvious

as a method for improved cleaning teeth efficacy to one of skill in the art. In the present invention, the method of cleaning using a slip agent in the bristles improved cleaning even with a slip agent with what would be considered by one of skill in the art as undesirable characteristics of reduced wettability and improved slip. However, what Applicants discovered unexpectedly was that using these filaments with slip agents (see amended claim 1) is that even though the improved slip and reduced wettability were not considered desirable, they did actually improve overall tooth cleaning because they allowed the filaments to slide in between teeth and gums with greater ease and also produced a larger cleaning area per stroke. This improved cleaning is shown in Table 5, page 16 and page 16 line 16 – page 27, line 10 of the present invention.

Stewart discloses using bristles with edges for scraping the tooth (see Figures 3-7) rather than the compositional make up of the bristle using the slip agents of amended claim 1 of the present invention for improved method of cleaning teeth. Stewart does not disclose the slip agents of amended claim 1. (See amended claim 1 from which claim 8 depends in the present invention.)

Furthermore, neither of these prior art references suggest or lead one of ordinary skill in the art to combine these references to yield Applicants invention as they are directed to varying purposes. Cross discloses impregnating a bristle for antiseptic properties, Gueret discloses applying a liquid product such as mascara and nail polish to a substrate, and Stewart discloses using bristles with edges for scraping a tooth. However, assuming arguendo, that these references were combined none of these references provide the slip agents of amended claim 1 to provide the improved cleaning efficacy of the present invention method for cleaning teeth.

Thus, for the above reasons, claim 8 dependent from amended claim 1, is believed not obvious in light of Cross in view of Gueret in view of Stewart. Hence, reconsideration and allowance of claim 8 is respectfully requested.

7. Claims 9-10 have been rejected under 35 USC 103(a) as being unpatentable over Needham et al. (USPN 6, 270,895) in view of Dumler et al. (USPN 5, 638,568).

Needham discloses the use of glitter to improve the appearance of the brush filaments and to be mildly abrasive. (col. 2, lines 4-8) .

Dumler discloses the use of a small brush but does not disclose the use of the slip agents of amended claim 1 for the cleaning efficacy of the present invention. Dumler discloses reducing unpleasant galvanic reactions using the small brush.

Furthermore the combination of these references would not have been obvious to attain the present invention as Needham discloses improving the appearance of brush filaments using glitter and Dumler discloses reducing unpleasant galvanic reactions. However, assuming arguendo that the cited art were combined they do not combine to make

the present invention obvious as neither Needham or Dumler discloses the slip agents of amended claim 1 to improve the cleaning efficacy of the present invention.

Thus, for these reasons, claims 9 and 10, dependent from amended claim 1, is not believed obvious in view of the cited art. Reconsideration and allowance of claims 9 and 10 is respectively requested.

8. Claims 9-10 have been rejected under 35 USC 103 (a) as being unpatentable over Antonio (USPN 6, 482,511) in view of Dumler et al. (USPN 5,638,569).

Antonio discloses filaments that use a radiation sensitive, mark forming additive, not the slip agent of the present invention. The addition of the additive is not for slip properties or to improve the cleaning efficacy of teeth but to make the polymer more receptive to laser light and allow it to be marked by a laser.

Dumler discloses the use of a small brush but does not disclose the use of the slip agents of amended claim 1, for the cleaning efficacy of the present invention. Dumler discloses reducing unpleasant galvanic reactions using the small brush.

Furthermore the combination of these references would not have been obvious to attain the present invention as Antonio discloses laser marking of the filaments and Dumler discloses reducing unpleasant galvanic reactions. However, assuming *arguendo* that the cited art were combined they do not combine to make the present invention obvious as neither Antonio or Dumler discloses the slip agents of amended claim 1 to improve the cleaning efficacy of the present invention.

Thus, for these reasons, claims 9 and 10, dependent from amended claim 1, is not believed obvious in view of the cited art. Reconsideration and allowance of claims 9 and 10 is respectively requested.

9. Claims 9-10 have been rejected under 35 USC 103(a) as being unpatentable over Cross (USPN 2,670,489) in view of Gueret (USPN 5,462,798) in view of Dumler et al. (USPN) 5,638,568).

Applicants contend for the previously stated reasons in paragraph 3 above that the prior art of Cross and Gueret would not make the present invention obvious singly or in view of each other.

Dumler discloses the use of a small brush but does not disclose the use of the slip agents for the cleaning efficacy of the present invention. Dumler discloses reducing unpleasant galvanic reactions using the small brush.

Furthermore, neither of these prior art references suggest or lead one of ordinary skill in the art to combine these references to yield Applicants invention as they are directed to varying purposes. Cross discloses impregnating a bristle for antiseptic properties, Gueret discloses applying a liquid product such as mascara and nail polish to a substrate, and Dumler

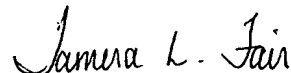
discloses reducing unpleasant galvanic reactions using a small brush. However, assuming arguendo, that these references were combined none of these references provide the slip agents of amended claim 1 to provide the improved cleaning efficacy of the present invention method for cleaning teeth.

Thus, for these reasons, claims 9 and 10, dependent from amended claim 1, is not believed obvious in view of the cited art. Reconsideration and allowance of claims 9 and 10 is respectively requested.

No extension fees are believed due. However, should this be in error, please charge or credit Deposit Account No. 04-1928 (E.I. DuPont de Nemours and Company) any appropriate fee.

In view of the forgoing, allowance of the above-referenced application is respectfully requested.

Respectfully submitted,



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